

[SUPERJUNCTION SCHOTTKY DEVICE AND FABRICATION THEREOF]

Abstract

A superjunction Schottky device is described. The Schottky device includes a back metal layer, a semiconductor substrate of a first conductivity type, superjunction cells on the substrate, a lightly-doped JBS (Junction Barrier Schottky) region of the first conductivity type on each superjunction cell, and a front conductor layer. The superjunction cells include numerous charge-balanced junctions that extend substantially vertically, and the front conductor layer is disposed contacting with the JBS region to form a Schottky contact.